THE SCIENTIFIC AMERICAN.

THF ADVOCATF OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

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THE
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RUFUS PORTER,—Editor.

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Song of the Volunteers.

TUNE.—"Old Dan Tucker."

The Mexicans are on our soil,
In war they wish us to embroil;
They've tried their best and worst to vex us
By murdering our brave men in Texas.
Chorus.—We're on our way to Matamoras,
On our way to Matamoras,
On our way to Matamoras,
And we'll drive the foe before us.

We are the boys who fear no noise,
We'll leave behind us all our joys
To punish those half-savage scamps,
Who've slain our brethren in the camps.
We're on our way, &c.

They've slaughter'd Porter, Kain and Cross,
Most deeply we deplore their loss;
Those bloody deeds we'll make them rue,
And pay them off for old and new!
We're on our way, &c.

We'll cross the famous Rio Grande,
Engage the villains hand to hand,
And punish them for all their sins,
By stripping off their yellow skins.
We're on our way, &c.

Herrera and Paredes too,
And all the chiefs of the vile crew,
We'll show unto their lazaroni,
Mounted on a wooden pony.
We're on our way, &c.

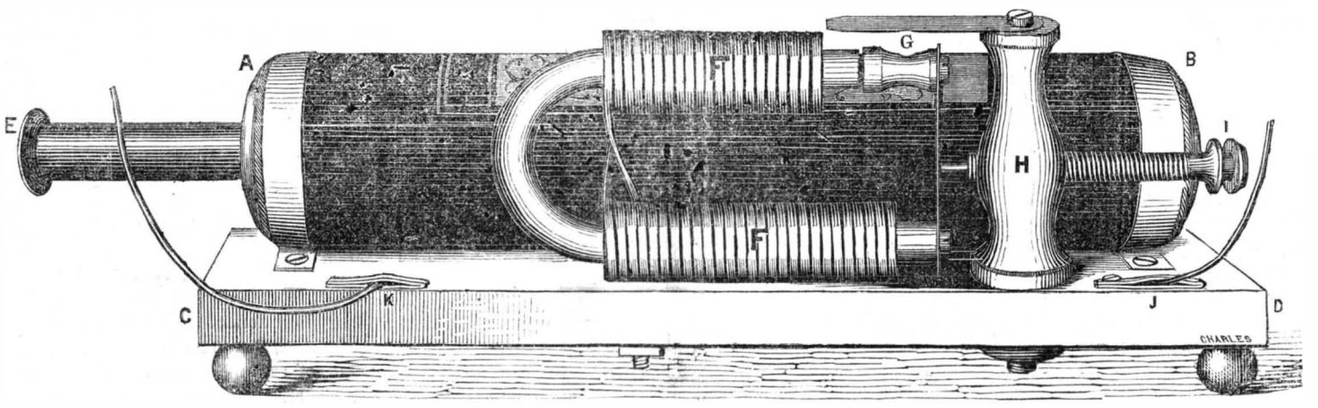
And when we've punished them enough,
We'll make them shell ns out the stuff
To pay the war's expense, and then
We'll have besides, old Yucatan
We're on onr way, &c.

Meanwhile our brethren at the west
Will for our nation do their best,
And when they've ended their long journey
Our flag will float in California.
We're on our way, &c.

We have a mission to fulfil,
And every drop of blood we'll spill,
Unless the tyrants of our race
Come quail before our eagle's face.
We're on our way, &c.

So every honest volunteer
May now come forth—the coast is clear;
We ask no odds, for we are bent
On having this whole continent.
We're on our way, &c.

SMITH'S ELECTRO-MAGNETIC MACHINE.



EXPLANATION.—We explained the principles of the ordinary machine for communicating shocks, in a former number. The machine containing Dr. Smith's improvement, is constructed in a similar manner in the main, and consisting of two helices, one within the other, and a bundle of soft iron wires in the centre. These helices are enclosed in a cylinder of morocco, and secured by two brass bands A B to a mahogany plate or platform C D. The central bundle of wires is encased in a tube of thin iron plate E, and may be occasionally drawn out, as shown in the engraving. An electro-U-magnet with a helical coil, F F, on each prong, is placed by the side of the cylinder; and near the end of the upper prong is a hammer, G, which is connected by a strip of platina plate to the end of the lower prong. This hammer is so adjusted, as to stand ordinarily about one-twentieth of an inch from the upper prong. Near the hammer is a brass post, H, the centre of which supports a horizontal screw, I, and the point of the screw approaches the platina plate on which the hammer is mounted. When adjusted for operation, one end of the wire which constitutes the interior helix, is connected to one pole of a galvanic battery; and the other end of the wire is connected to the helical coils, F F, which is also connected to the body of the magnet: and the post H is connected by another wire, to the other pole of the battery. Thus it will be seen, that while the platina plate continues in contact with the point of the screw, a circuit connection is closed via the magnet, screw and post, between the interior helix and the battery. But the current of electricity passing through the helical coils, induces a magnetic attraction which draws the hammer to the magnet, and consequently breaks the contact between the platina and the screw: and the circuit thus being broken, the attraction of the magnet ceases, and the platina returns to its former position by its own elasticity, again closing the circuit, and inducing the magnetic attraction, &c., thus producing in the hammer 10,000 or 15,000 vibrations per minute, by each of which, the circuit being broken or closed, a shock or wave of secondary electricity is induced in the exterior helix, and produces a sensible shock to any person who may constitute a part of a secondary circuit, connected with the two ends of the exterior helix. This helix is composed of fine wire, and for the purpose of communicating shocks, the two ends of the wire are connected to the two connection plates, K L, from which two other wires extend to two brass handles, so that any person by taking hold of one of the handles with each hand, completes the secondary circuit, and will be subject to powerful shocks: and these shocks are more or less intense, in proportion to the distance which the central tube is inserted within the helices. One peculiarity of this machine is that the wires of the external and internal helices are so connected to each other, that shocks equally, or even more powerful, are produced by connecting one of the secondary wires to either pole of the battery, or the solution therein. These machines, finished in elegant style, will be furnished at the low price of 7 dol. 50 cts. at this office.

USE OF THE BAROMETER.—1. The rising of the mercury presages in general fair weather, and in falling, foul weather, as rain, snow, high winds, and storms.

2. In hot weather, especially if the wind is south, the sudden falling of the mercury foretells thunder.

3. In winter the rising indicates frost; and in frosty weather, if the mercury falls three or four divisions, there will follow a thaw; but if it rises in a continued frost, snow may be expected.

4. When foul weather happens soon after the fall of the mercury, it will not be of long duration; nor are we to expect a continuance of fair weather when it soon succeeds the rising of the quicksilver.

5. If in foul weather the mercury rises considerably, and continues rising two or three days before the foul weather is over, a continuance of fair weather may be expected to follow.

6. In fair weather, when the mercury falls much and low, and continues falling for two or three days before rain comes, much wet weather may be expected, and probably high winds.

7. The unsettled motion of the mercury indicates changeable weather.

8. Respecting the words engraved on the register plate of the barometer, it may be observed that they cannot be strictly relied upon, to correspond exactly with the state of the weather, though it will in general agree with them, as to the mercury rising and and falling.

LARGE AND SMALL NEWSPAPERS.—It is one of the sorry errors of the world that the merit and value of a paper is supposed to go up with its size. Nothing can be more distant from the truth, and the world is a confounded booby-head for entertaining it. Your mammoth sized papers are terrible bores—great diluters of sense—ghosts of ideas. Their editors may be very clever sort of men, expert at driving the quill, straddle the scissors with marvellous skill, and all that sort of thing, but they must necessarily spread an idea over a murderous extension, and fritter away its substance into foggy nothing. But he of your small sheet, with columns compressed into sensible coziness, must write nothing but ideas—and only the heart of *them.*—Brief, concise, terse, he must roll a sentiment in every syllable—a sermon in every word. Never take, then, the half-year's stock of a steam paper-mill for ideas, information, and those desirables. It is enough that they exhaust the language and give a thrice printed dictionary; more, you have not a right to look for. But if you want the mirror of the time—the spice of the age—live and recognizable ideas—look in papers of moderate and small size. —*Woburn Gazette.*

PORTABLE LIGHTNING.—An embryo Franklin was parading the streets on Saturday, with a small, but powerful magnetic machine under his arm in full operation. After inviting several persons to hold it a moment, he finally persuaded a darkee to lay hold of the very nice looking brass handles, while he went back a few doors of an errand. Unsuspicious Sambo grasped the machine with a pair of paws that might have held back a locomotive, but at the instant of contact he gave a twist of the face, a howl and backward jump of about six feet, looking at his palsied hands, and said: 'Look-a-here young man, it's my 'pinion you is a debil or his first child, and dem shiny tings dare your horns.' And amid the laughter of the by-standers, Sambo walked off awfully shocked at holding the devil by the horns.—*Ex. Paper.*

Poet-Tree.

Do not think
We can drink,
Free from care,
Where we are.
Now then come out,
And take some route
That leads from hence,
And save your pence:
For should those Jews,
Once take such views
As once they had,
Our chance is bad:
And should we stay,
En gaged in play,
And drinking wine,
So late as nine,
We cannot be sure,
That we can secure
A safe re- treat,
From Alden street
We have won;
Now the fun,
Being done,
Let us run:
We'll reach
The beach,
And float
The boat,
And cross oer,
To the other shore,
And return to our lodging and revel no more.

QUEEN VICTORIA.—A correspondent of the Boston Courier says: 'I saw her Majesty very lately; she looked pale and ill, and wore an expression of satiety and discontent. Prince Albert was with her and bowed gracefully as he passed. You, accustomed to a land of liberty and equality, would doubtless smile could you see our Sovereign travel. The sound of horses feet is the first notice of her approach, and the next a troop of soldiers fly past as swiftly as a March wind, and raising just as much dust: then comes an open carriage, with four horses and military outriders, and seated therein is a lady with fine eyes, and usually wearing a shawl and drawn bonnet of pink, blue or straw color; the monarch of an empire on which the sun never sets. With her are Prince Albert and the Princess Royal; the second carriage contains the other children and their nurses, and the third is occupied by the Equerries in Waiting, &c. Our Queen is a pattern to her sex. She rises at *seven o'clock;* enters the nursery at *eight,* to indulge in a romp with her children, like any other mother; at *nine* the household assemble for *prayers;* she prohibits breakfast being served to any one in the Palace, later than *ten,* owever highh their rank.

EMIGRATION TO OREGON.—A writer in the Oregon Territory computes the Emigration into that territory by the sources of the Platte and the Arkansas rivers as follows:—

"In 1842, 137 men, women and children; in 1843, 872 men, women and children, and 1300 head of cattle; in 1844, 475 men, women a children, and 3000 head of cattle and sheep; in 1845, 3000 men, women and children, and 7500 head of cattle and sheep. These emigrating parties, together with smaller ones by sea, from the mountain, and from California, make the American population of Oregon about 8000; which, added to 1250 British, gives the strength of the white population of that territory."

The number of volunteers for the Mexican war, who offered themselves in Louisiana, says the New Orleans Bulletin, was 7000, equal to one fourth of the voting population of the State, and equivalent to 121,000 men from the State of New York, or 706,000 from the entire Union. The number actually sent into the field by Louisiana, is in the proportion of one in five and three-fifths of her voting population, equivalent to 90,000 men from New York, or to the enormous aggregate of 504,000 for the Union; developing a degree of military strength in the Republic, that may well surprise its friends and startle its enemies.

CHIMNEYS.—Instead of plastering the inside of chimneys in the usual way, take mortar made with one peck of salt to each bushel of lime, adding as much sand and loam as will render it fit to work, and then lay on a thick coat. If the chimney has no offset for the soot to lodge on, it will continue perfectly clean, and free from all danger of taking fire. A trial of three years warrants this assertion.

IMPROVEMENTS AT SACO, ME.—The Portland Advertiser says this town is growing very fast.—One large factory, and over 100 other buildings, some of them very large and costly, were erected here during the year 1845. There are now in this place five large factories, containing 38,944 spindles and 1,100 looms, making 202,000 yards of cloth a week. Another huge mill, to contain 24,000 spindles, and between 600 and 700 looms, is in process of erection.

THEM DIGGERS.—A second steam shovel arrived in town on Monday to be used at the Hour-Glass—making one on each end. They will dig into the hill until they meet in the middle, which will be we suppose in about eight months. After they have dug the dirt all away, we propose the contractor let them try their strength by digging into each other for the amusement of spectators. It would be as good as an elephant fight.—*Vt. Jour.*

JUMBLES.—Three pounds of flour, two of sugar, one of butter, eight eggs, with a little caraway seed, and a little milk, if the eggs are not sufficient. —*Ex Paper.*

ANOTHER.—Tumble from a stage coach into a ditch, mix yourselves to a tender consistency with six trunks and a dozen band-boxes, try with one leg to extricate yourself, and fracture the other, and add, by way of sweetening and finish, a broken neck. There is nothing to compare with it.—*Woburn Gazette.*

TOO BIG A BOOH!—A man being about to purchase a young horse, was fearful he might prove skittish, as the phrase is; and in order to test his soundness, or strength of nerve, directed his boy to go a little way off, behind the next corner, and he would ride the colt down opposite to him, when he should start suddenly out, and cry 'booh!' and if the colt could stand that, it would be proof enough of his being firm and well broke. The boy took his station, and the man mounted and rode along; but when he came opposite the corner, and the boy jumped out and cried 'booh!' the colt threw him off. The rider picked himself up soon, however, and rubbing his shoulder and shins, asked the boy what he did so for. 'Why, father,' said the boy, 'you told me to say *booh.*' 'Yes,' said the old man, 'but there was no need of saying such a *big booh* to such a little horse.'

Anecdotes.

Old, but worth preserving.

ONE WAY TO GET RUM.—A rummer, who occasionally used to be short of change, had recourse to the following expedient to 'raise the wind.' He got two pint bottles, exactly alike, one in each pocket, he entered the groggery and called for a pint of gin. The bottle was filled and handed to him, when he put it in his pocket, at the same time telling the landlord he had no money 'Then I won't trust you, so give me back my gin,' said the landlord. If you won't there's no harm done, added the other, reluctantly pulling the bottle of water from his pocket and handing it over, it was quickly emptied into the cask. There wasn't much harm done to the landlord, that's a fact, for although rummey had had this bottle of gin, the same number of pints were drawn from the cask.

DIAMOND CUT DIAMOND.—Under this caption, we find in an exchange paper, an amusing story of a Yankee pedlar who entered the store of a Yankee Merchant, for the puruose of selling him some 'first rate razor strops.' The merchant declined purchasing, but the pedlar insisted, and offered to take in payment any sort of goods in the shop at the full retail prices. To this the merchant assented, and having selected six dozen of the strops at six dollars per dozen, and secured a receipted bill, forthwith tendered thirty six of them at a dollar apiece in payment.

FAIR BETTING.—A correspondent of the Spirit of the Times says he saw an Irishman bet a Dutchman one dollar on Fashion, which of course the Irishman lost. Shortly after the money-taker came round, and was offered by the Dutchman the dollar he had won. 'No, no,' said the collector, 'this don't go, it's pewter.' 'Der duyvil,' said the Dutchman, 'I won it a little while ago of an Irishman—the cursed cheat.' 'Well, well,' said the collector, 'you've got another dollar—you must have had, or you couldn't have bet.' 'Oh, yes,' said the Dutchman, finding that he was cornered, 'oh yes, but mine Got, *mine ish a bad one, too!*'

AN EYE TO BUSINESS.—One of the best anecdotes that we have ever seen, illustrative of the Yankee character, is told of the two men, who were drifted on the little island near the head of the Niagara Falls, where they were apparently cut off from all possibility of safely reaching the main shore. At the moment when their friends had given them up as lost, the two individuals were actively employed in cutting sticks as canes, which they subsequently disposed of at a high price. This is indeed having 'an eye to business.'

INVESTIGATION.—A drunken sailor in riding through the streets recently found himself seized with an irresistible propensitity to pitch forward, much to the annoyance and to the complete sacrifice of all horsemanship. Not being able to recover his centre of gravity, and far from suspecting that the cause was in any way connected with himself, he swore that the fore legs of his steed must be shorter than the hind, and actually stopped and *measured* them.

A LAWYER'S SPECTACLES.—A French countryman employed a lawyer to conduct a cause, but did not seem in a hurry to give him his fee. 'Friend,' said the attorney, 'your business is so confused I cannot see my way into it.' The countryman, who was aware of his meaning, drew two pieces of gold out of his pocket, and giving them to the limb of the law, said, 'Well then, sir, here is an excellent pair of spectacles for you.'

STREET YARNS.—A distinguished counsellor at Nantucket found a ball of yarn in the street, and winding up the thread, he followed it until he overtook the lady who dropped the ball, and had the other end of the thread in her pocket. The counsellor made his politest bow, put on his blandest smile, and returning her the ball, said, 'Madam, I have often heard of ladies spinning street yarn, but I never caught one at it before.'

PROPER RESENTMENT.—A mild tempered old gentleman was going down his cellar stairs with a lamp and old brown pitcher, on a frosty evening, and his feet slipping, from the first step, he was precipitated to the bottom. His wife, a nice old lady, hearing the noise, ran to the cellar door and called out, 'Why husband: have you broken that pitcher?' 'No I haint yet,' replied the old man, 'but be darn'd if I don't do it now,' and immediately smashed the pitcher against the cellar wall.

A LEFT-TENNANT.—'And isn't it an officer I am, sure?' said an Irishman who was standing alone in a large house, to a crony who was passing by. 'How so, pray?' enquired the other. 'Why because you see, all the other folks are gone, and I am *left-tenant.*'

A TAR'S TIMEPIECE.—As a thorough-paced tar was passing St. Paul's the other day, the clock struck twelve. Jack instinctively put his hand to his pocket, and pulling out his newly bought watch, exclaimed with evident satisfaction and a few nautical embellishments,—'There! if this little chap hasn't beat that great lazy lubber an hour!"

SCIENTIFIC.—An old lady who had been reading Locke's famous moon story very attentively replied with emphasis, that the idea of the moon's being inhabited was too incredible to believe; 'for,' said she, 'what becomes of the people when the moon is nothing but a little *streak?*'

ECONOMY.—An Irish servant, seeing his master about to throw a letter out of the window, said to him: 'O plase yer honor, don't throw the letter away, but give it to me, if you plase. I will send it to my father. I promised, sure and fast, I would send him one as soon as I came here.'

A HEAVY LOAD.—A little boy lately walked nearly a mile, carrying on his shoulder an iron article which weighs *twelve hundred pounds!* Don't start, reader: the article was *patent steelyards.*

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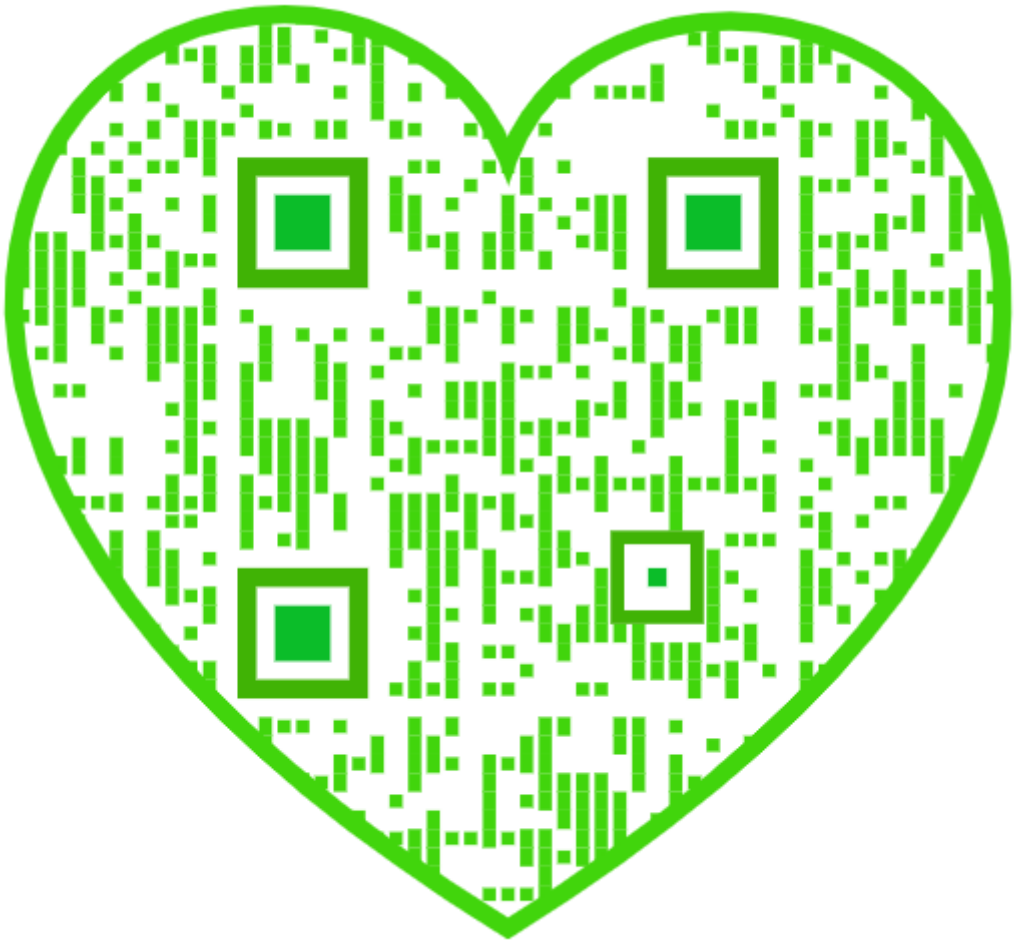
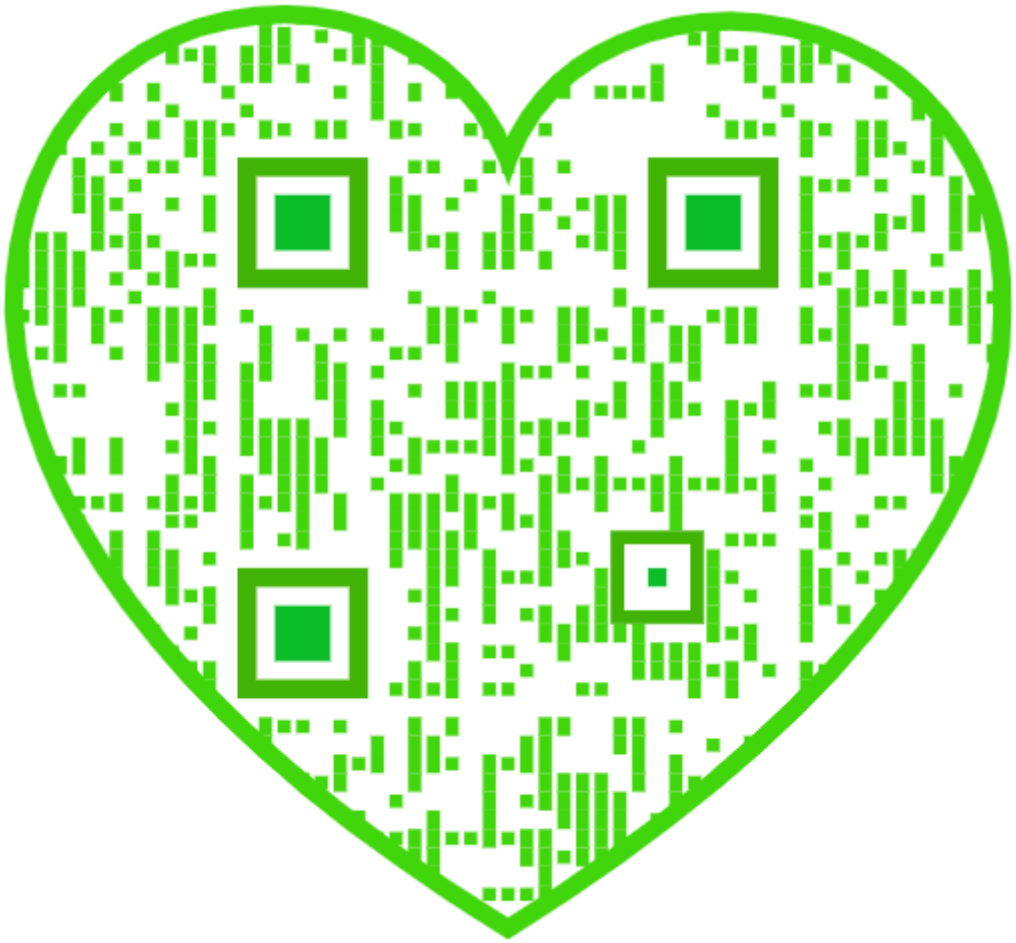




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, JULY 23.

Drawings of machinery, engraving on wood, and lithographic drawings, neatly executed, at the lowest prices, at this office.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics. The aid, also, and influence of all our kind patrons, in extending the notice and circulation of this paper, is most respectfully solicited.

Foreign News.

The steam ship Cambria arrived at Boston on Friday last, 13 1-2 days from Liverpool.

The famous Corn Bill passed the House of Lords on its third reading, on the evening of June 24th, without a division. On the Saturday evening following, Sir Robert Peel proceeded to the Isle of Wight for the purpose of tendering his own and his colleagues' resignation to the Queen: and on Monday night he made an exposition of his motive in resigning, in a long speech before the House of of Commons. The attention of manufacturers and merchants is fixed on the American Tariff: and strong hopes are entertained that the duties on imported goods will be reduced before adjournment of Congress.

There is much joy manifested throughout the kingdom, on the occasion of the happy adjustment of the Oregon Question. Every press expresses much satisfaction, and most of them compliment the honorable and patriotic course of President Polk, in submitting the question to the Senate. There is on this occasion more good feeling manifested toward this country than ever before. This subject is also treated in a similar strain in the French journals.

STILL LATER.—The mammoth steam ship Great Britain arrived on Tuesday morning, having been only thirteen days on the passage. She brings dates three days later than received by the Cambria.

One of the most terrific thunder storms ever known, passed over Devonshire on the fifth: also at Birmingham and Liverpool. Another battle had occurred between the French and the Arabians, in which about fifty were killed.

The Mexican accounts of the late collision with the American forces, had been received in England, and confirmed the conviction that the Mexicans are not able to contend against the American arms.

TOOLS FOR BOYS.—The Boston Cultivator very properly recommends to farmers to furnish their boys with tools of suitable and convenient sizes for them to operate with: and it is still more important that mechanics' boys should be furnish with such tools as will tend to induce a habit of, as well as a fondness for, mechanical industry. It is a fact that much of the time which is worse than wasted by the sons of mechanics, might and would be profitably improved, and with more pleasure and satisfaction to the boys themselves, if they were supplied with convenient tools for operating according to their own taste and fancy, but with suitable instructions with regard to the management of the tools, and the principal rules to be observed in their application. They should also be supplied with suitable materials, whether of wood, iron, or leather, and encouraged by occasional attention and commendation, which will infallibly induce them to prefer this kind of amusement to that of strolling, loitering, or playing at "rough and tumble," when not engaged with school lessons.

WIDE GUAGE RAILROADS.—Deep investigations have recently been made in England with regard to the relative merits and safety of the wide and the narrow guage for railroad tracks, from the result of which, it appears evident that as a general rule, there may be as much safety in running railroad trains at a speed of forty miles an hour, on roads, the rails of which are laid six feet apart, as in running thirty miles an hour on tracks of 8 feet 10 inches, which is the ordinary guage. With this view of the case, it appears evident that the rails on all the principal roads in this country will eventually be required to be re-laid on the wide guage, in order to safely accommodate the speed required by the travelling public. During the rigid monopolies which at present exist on some of the routes, the proprietors may content their hearts with a jog trot speed of 18 or 20 miles per hour. But monopolies cannot be of permanent duration where public convenience requires accommodation, and competition must and will be introduced, even if Governors and Legislators have to be removed to effect it, and the result will be that the wide guage and permanent rails will supersede those of the cheap and narrow roads in present use.

POISONOUS GAS.—It has recently been discovered that there is constantly issuing from the bottom of the Monongahela river, at a point opposite Pittsburg, a highly noxious gas, composed in part of ammonia. Several persons have been drowned while bathing in the river at this place, supposed to have been occasioned by inhaling this gas; and recently a small alligator having breathed some of this gas, floundered to the shore and immediately died.

POLAR INDICATIONS.—It is a fact worthy of the attention of hunters, and of all who have occasion to traverse the foretss, that all forest trees as a general rule, send out longer branches on the north, than on the south side. From this circumstance, it is an easy matter for any person who is bewildered in a forest, to ascertain which is the northern direction, and shape his course accordingly.

New Inventions.

A NEW GAS ENGINE.—An engine on a new principle has been invented by a Mr. Perry of Herkiman, and is now in operation at the store of Mr. Samuel Perry, in Front street, near Whitehall, and evinces an astonishing power in proportion to the minute quantity of material from which the power is produced. The machinery consists in part, of a cylinder, piston, pitman, flywheel and governor; in this respect similar to a steam engine. A small quantity of spirits of turpentine is kept in a warm state, and the vapor arising therefrom is mixed with fifty times its volume of atmospheric air. A small quantity of this hydroginated air is drawn into the cylinder and ignited by a movement of the machinery, producing a slight explosion, whereby the remaining air,—at least nine-tenths of the whole,—becomes so heated that it drives forward the piston with great force by its expansion. This engine is said to be capable of working ten horse powers; and it is intended to substitute rosin instead of turpentine, which will reduce the expense of feeding it to about 50 cents per day. The ingenious inventor has had some difficulties to encounter in the construction of the first engine, but has a fair prospect of being well remunerated for his labor.

THE PARALLEL WATERWHEEL.—Some of our readers will remember that in No. 3 of this paper, we presented the plan and description of the parallel waterwheel, but which had not then been put in operation. One has since been constructed, and is in successful operation at East Haven, Conn. It is a small sized horizontal wheel, calculated to run under water—consequently not affected by ice nor back-water;—and so constructed that while the water acts equally on opposite sides of the wheel at the same time, it cannot escape any faster than the wheel moves; and consequently it gives more power in proportion to the quantity and fall of the water than any other wheel in use, *without exception.* These water-wheels are portable, and may be sent to any part of the country, ready set up and ready to run. Price $75.

IMPROVEMENT IN THE GUITAR.—We have been shown a beautiful instrument of this kind, with an improvement which renders it superior to any other in use, with regard to its tone, elegance, and durability. The improvement consists in the addition of a tail-piece of peculiar construction, and secured by a dovetail, which renders it secure and permanent, and actually improves the tones. The strings are attached to this piece instead of depending on the permanency of the bridge to hold them. This improvement was invented by Signor J. E. Bini, who has taken measures for securing a patent therefor. A specimen may be seen at Kiefer's manufactory, 108 Delancy street.

PHOTOGRAPHIC PRINTING.—The editor of the Boston Atlas has received, or pretends to have received a letter from a London correspondent, stating that a late number of the "Art Union" appeared with a beautiful landscape picture, impressed or produced on the paper—on each sheet of the edition, of course,—by the sun's rays, on the photographic principle. Whether the editor of the Atlas has been hoaxed on this subject himself, or merely thinks to hoax his unscientific readers with nonsense, may be best known to himself: but the idea of working off an edition of periodicals with original "sun pictures," can not be swallowed by those who have advanced three steps from total darkness on the subject.

An Interesting Wonder in Astronomy.

We have never found an article or circumstance in the science of astronomy, which has excited more admiration in our mind, than the statement of M. Argo, the eminent French astronomer, on the subject of the distance of the planets. We are strongly inclined to the opinion, that the required addition of *fours*, mentioned in the following statement, is in consequence of some inaccuracy of observation, occasioned by refraction or some other cause as yet unknown.

It is stated that if we place in a horizontal line, a series of figures, of which the law is evident, each doubling the preceding:

0 3 6 12 24 48 96 192

—and afterwards add four to each, we should have a series denoting the relative distance of the planets from the sun. Thus:

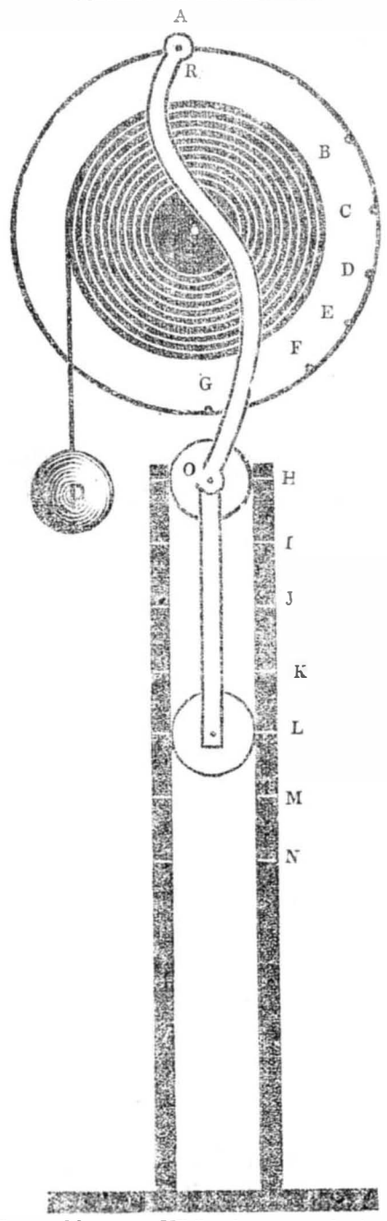
4 7 10 16 28 52 100 196

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus. If 10 represents, the distance, of the of the Earth, 4 will be that of Mercury, 7 Venus, 16 Mars, and 62, 100, and 196 the respective distance of Jupiter, Saturn, and Uranus. This law was known as far as 100 years before the discovery of Uranus; and the distance of that planet being found to correspond, affords a very remarkable confirmation of its truth. But it will be observed, there will be a deficiency of one term between Mars and Jupiter, at the proportional distance of 28 from the sun. At this point a small planet was some time since discovered. This planet was named Ceres; and, since, three others have been found—Pallas, Juno and Vesta: all of which have their orbits so near each other as to lead astronomers to believe that they are fragments of a large planet, which had been shattered into pieces by some internal explosion, or the shock of a comet.

IMPROVEMENT IN MANCHESTER, N. H.—Ten years ago, says the Messenger, five thousand dollars a year were enough to carry on the business operations of Manchester. Now, the companies here disburse nearly *one hundred thousand dollars per month!* Verily, Manchester has sprung up as if by magic.

CEMENT FOR JOINING STONE.—Twenty parts of clean river sand, with two parts of litharge and one of quick lime, being mixed with linseed oil to the consistence of putty, is said to be an excellent cement for joining pieces of stone, when broken off from stone steps, posts, &c. It soon becomes nearly as hard as granite.

Science of Mechanics.



CRANK MOTION.—While the atmospheric resistance to the quick motion of machinery has been in a great measure overlooked, much has been said of the great loss of power by the "crank motion," and many ways and methods have been contrived for the ostensible purpose of avoiding it. We shall endeavor, however, in this number, to demonstrate that there is in fact no loss of power sustained by the use of the crank. It is well known and admitted to be an established point, that in raising ponderous bodies, in opposition to the force of gravity, an equal power is required to raise it a specified vertical distance, whether the motion be direct or oblique —perpendicular or inclined: and that the power produced by the descent of a ponderous body, a specified vertical distance, is uniformly the same, whether the direction of the descending body be perpendicular or inclined. This has been fully illustrated in a former number, treating on the subject of the lever principle and inclined plane. In the diagram at the head of this article, are seen two wheels on a common axle. Suppose the diameter of the large wheel to be six feet, and the circumference of the small wheel to be twelve feet: so that the semi-circumference of the second wheel may be equal to the diameter of the first. A *Shackle-bar* (drawn crooked merely to accommodate the reference, but without affecting the principle) is connected to the periphery of the first wheel, by a crank pivot at A, and olso by another pivot to a vertical sliding-bar, at O, which answers in principle to the piston of a steam engine. To each end of the sliding-bar is attached a small wheel, which relieves it from friction in its vertical motion, being guided by two upright posts. From the periphery of the second wheel a cord descends to the ball P, which ball is supposed to be equal in weight to the shackle-bar, sliding-bar, and friction-wheels combined; and it will be observed that both the ball, P, and the wheel, O, will descend precisely an equal distance, in producing a semi-revolution of the wheel, notwithstanding that there is some difference in their relative progress; the ball descending one foot for each twelfth part of a revolution, while the sliding-bar, in descending one foot carries the crank-pivot from A to B, the next to C, &c. In its present position the sliding-bar has no influence on the wheel; its position, being at what is termed the "dead-point," and needs some little momentum, or other force, to carry it forward; yet it is evident that there is as much influence exerted on the wheel by these bars, in moving it from A to B, as would be exerted by the ball in descending one foot, and it will be readily seen that the shackle-bar has a greater influence on the wheel, by nearly fifty per cent., while the crank-pivot is passing from C to E, than has the ball in ordinary. The influence of the bars on the wheel is equal, in each stage of the progress of the crank-pivot from A to G. The influence of the ball is uniform. It has been supposed and contended that in the crank-motion there is considerable power lost in momentum, by changing the direction of the rectilinear parts of the machinery: but when the subject is properly considered it will be perceived that during the progress of the rectilinear machinery from the point of its greatest velocity to that of changing direction, the momentum thereof exerts an influence in forwarding the motion of the wheel, equal to the resistance of inertia from the commencement of motion in either direction, to the point of its greatest velocity. To conclude this subject, it is abundantly evident on the principle of the laws of equality, that the bars and wheels have an equal influence with the ball, in each stage of their progress from H to N—that the same rules will apply with regard to the other half of the revolution of the wheel; and that if the order is reversed and the driving power is applied via the rotary motion, the movement will be subject to disadvantages in consequence of the *crank motion.*

Arts and Trades.

THE MANUFACTURE OF STRAW PAPER.—The straw for this purpose is thrown into a vat and exposed for twenty-four hours to the action of lime water, and then boiled another day in water, by which process it is made sufficiently soft. It is then submitted to the mill, together with about one-tenth of its weight of old ropes, canvas, or refuse hemp, and ground to a pulp in a sufficient quantity of water, after which it passes into a box where it comes in contact with an iron cylinder covered with fine wire gauze; and as this cylinder revolves moderately, it takes up the pulp, allowing the water to escape, while the solid material is deposited on a broad flannel apron or band, which is kept in motion by passing over two cylindrical rollers, and the pulp becomes consolidated by passing between two or more pairs of small cylinders, and is then, by a continuous motion passed over a large drying cylinder, which is six feet in diameter. This cylinder is kept moderately heated by means of a stove or furnace adjusted within it, and the paper is pressed to the surface of the cylinder by another broad band of cloth which passes partly round it. By this operation the paper is thoroughly dried, and passes thence to a pair of rotary shears, by which it is cut into sheets of the requisite size, and the sheets are evenly deposited, one upon another to the number of 24 sheets, when, by another movement of machinery the quire is removed to make way for another succeeding quire. About two quires, or fifty sheets per minute are thus cut and deposited. Thus by a single operation of our combined machine, three or four thousand pounds per day, of coarse straw and other material, is converted to paper ready for market. The quantity of paper manufactured in the United States, in one day, is supposed to be sufficient to cover 1000 acres of land; or if formed into a strip one foot wide, would extend 5000 miles.

IMPROVED METHOD OF AQUATINTA ENGRAVING.—After the intended figure is outlined, by etching or otherwise, the plate is covered all over with a ground of rosin, Burgundy pitch, or mastic dissolved in rectified spirits of wine; this is done by holding the plate in an inclined position, and pouring the above composition over it. The spirit of wine almost immediately evaporates, and leaves the resinous substance in a granulated state, equally dissolved over every part. The granulations thus produced, if examined through a magnifying glass, will be found extremely regular and beautiful. When the particles are extremely minute, and near to each other, the impression from the plate appears to the naked eye exactly like a wash of Indian ink; but when they are larger, the granulations appear more distinct. This powder or granulation, is called the aquatinta grain The plate is next heated to make the powder adhere; and in those parts where a very strong shade wanted, it is scraped away; but where strong lights are wanted, a varnish is applied. The aqua fortis, properly diluted with water, is then put on with a piece of wax, as in common etching or engraving; and by repeated applications of this process, scraping where darker shades are required, and covering the light parts with varnish, the final effect is produced.

Engraving by aquatinta was invented by Le Prince, a French artist, by whom the process was long kept secret. It is even said that for some time he sold his prints, (which are still reckoned excellent specimens,) for drawings.

RUM AND WAR.—It appears by the statement of an affair in the Western army in a letter to his friends in Germantown, Pa., that there has been at least five times as many lives of the troops destroyed by rum and other liquors, as by the balls and bayonets of the enemy, within the last six month. He says that within three weeks after their arrival at Corpus Christi, "fifty grog shops had reared their hidra heads," in the immediate vicinity, and stood with open doors, with gaming tables, hot whiskey punch, Tom and Jerry, &c. and that '*hundreds* had been borne to their graves, the victims of intoxication, and diseases of every kind arising from excess." The climate and exposures have had very little effect on the temperate portion of the army, compared with that produced by intemperance. Is not Congress aware of the destructive effect of intoxicaticating liquors among the soldiers? Are the hands of the government so tied up by an oppressive constitution, that it has no power to remedy such health destroying and nation-degrading evils? If so, it is time for another general revolution throughout the country, to break the worse than tyrannical bands, and secure to this country the privilege of a government capable of protecting the army and citizens generally against the destruction and demoralizing influence of an enemy more to be deprecated than the oppressions which gave rise to the war of the former revolution.

MAMMOTH VEGETABLES.—The season has returned in which reports of beets, turnips, and beans of monstrous size may be expected from week to week. We have already heard of two mammoth beets, each twenty inches in circumference, and long enough to be mistaken for papooses; and many are vying with each other to see who can make out the most wonderful horticultural exhibition. For the purpose of setting these matters at rest, however, uncle Tobias Tongleford announces his determination to raise one or more carrots three feet in diameter, and four feet long: turnips 30 inches in diameter, and a cabbage head *seventeen feet* in circumference! Only think of it: what a monstrous cabbage that will be.

SINGULAR AFFAIR.—At Woonsocket on the 4th, a peaceable citizen being furiously attacked by an Irishman, on one of the bridges, the citizen suddenly grasped his assailant and jumped with him into the river. Hereupon a crowd rushed to the bridge, which gave way, and the crowd was precipitated into the water. No lives were lost, and it was quaintly remarked that the party had taken a public dinner of *cold duck.*

VARIETY

A dog was seen to pick up, eagerly, a bank note in State street, Boston, on Saturday, but immediately dropped it with a growl, and placing his paw upon it, tore it to pieces. It was proved, on examination of the pieces, to be a counterfeit.

Domanax being asked by a wag, 'How many pounds of smoke might be obtained from a hundred weight of wood?' calmly replied, 'Weigh the ashes, and what is wanting is smoke.'

Genius is cradled in poverty, and nurtured and reared among the stern and rugged scenes of existence. She could not bear the pamperings of luxury; she thrives best on the coarser fare of industry.

A violent tornado was experienced two or three weeks since in Mississippi, which extended in width about 150 yards, and destroyed in its course a new Baptist church, and 112 other buildings.

An unmarried lady, in Librety, Wis., has brought an action against the editor of the village paper, for saying she was *old* and respectable resident. He should not say 'old.'

Some old fashioned greeney recommends that men of principle should be selected as our principal men. It is evident he knows little of the policy of modern politicians.

The inhabitants of Catania, Sicily, when last heard from, had been for several weeks kept in a constant state of alarm by a frequent succession of earthquakes; some of them quite heavy.

A city cotemporary recommends to those who are in want of *a cheap boot or shoe*, to call on Young & Jones, No. 4 Ann st. We think they may as well take a *pair* while they are about it.

A convict at Boston has got clear from his sentence to the State Prison, by means of a writ of error, because the judge had omitted to give him any solitary confinement as the law requires.

It looks as decidedly awkward to see men raking hay by hand on smooth ground and where a horse-rake might be used, as to see them carrying it to market in their arms.

A new engine with a passenger train of 100 tons, lately performed the distance from Bristol (Eng.) to London,—118 miles,—in *two hours and twenty-six minutes*, including stops.

Some persons toil all their lives, and refuse the enjoyments which can only be relished when life is in its prime, that they may be rich when the power of enjoyment is over.

An anti-slavery lecturer, named officer, while delivering a lecture in Shannesville, Ohio, lately, was killed by a brickbat, thrown with great violence by a man named David M. Morris.

It is remarked that no instance has been known of a young child being killed or injured by lightning If this is a fact, it is an extraordinary manifestation of a special Providence in all things.

Two veins of sulphuret of copper have been opened in Flemington, N. J., from which in three months, twelve hands have produced sixty tons of ore, valued at four thousand dollars.

An English paper speaks in praise of the beauty of a new article of muslin, printed in gold figures by a galvanic process. It is particularly calculated for window curtains and other drapery.

The artesian well at South Boston, has been excavated to the depth of 140 feet, and the contractor has prepared cast iron tubes for the purpose of extending the bore to an indefinite depth.

Glass milk pans have been introduced in the English dairies, and are esteemed preferable to any other. We should be glad to see them adopted in this country.

A duel was recently fought in France, with ivory billiard balls, thrown by hand. One of the parties threw with such force and accuracy, as to kill his antagonist at the first shot.

The favorite actress, Miss Josephine Clifton, was married on Monday evening, to Mr. Place, manager of the American Theatre at New Orleans. She will probably retain her *Place.*

A bill has been reported in Congress, proposing uniform postage of five cents on letters for any distance, and one cent on newspapers. It is the best rate yet proposed.

An Irish-American thus defined his position with regard to the Oregon Question: "I go up to five thousand, four hundred and forty degrees intirely, and divil a fut further."

Twenty one thousand shad have been taken from the Merrimac river at East Haverhill, within eight weeks. They are fools for coursing up that river among so many people.

Mr. Reuben Brown, an insane Millerite, leaped from the fourth story window of a house in Boston, a distance of thirty-nine feet to the ground, last week, without injury.

The experiment is about to be made, of paving a section of Broadway with cubical blocks of granite. If they are laid right, the experiment will succeed.

A window sill, weighing nearly ten tons, and intended for the new Howard Atheneum, was hauled into Boston from the Quincy quarries last week. Not much *Howard* in that.

Counterfeit half dollars, made of German silver, are said to be in extensive circulation. They are dated 1838, and ring well, insomuch that the fraud is very difficult of detection.

A freshet occasioned by a late rain in Virginia, is said to have swept away every milldam in King George County, and several mills in Carolina.

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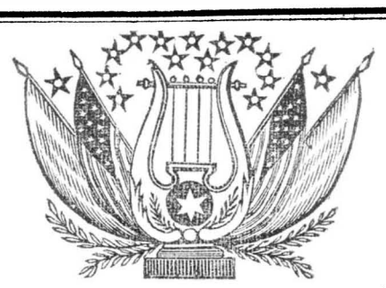


Nature's Nobleman.

Away with false fashion, so calm and so chill,
Where pleasure itself cannot please;
Away with cold breeding, that faithlessly still,
Affects to be quite at his ease;
For the deepest in feeling is highest in rank,
The freest is first in the band,
And nature's own nobleman, friendly and frank,
Is a man with his heart in his hand.

Fearless in honesty, gentle yet just,
He warmly can love and can hate;
Nor will he bow down with his face in the dust
To fashion's intolerant state;
For best in good breeding, and highest in rank,
Though lowly or poor in the land,
Is nature's own nobleman, friendly and frank,
The man with his heart in his hand.

His fashion is passion, sincere and intense,
His impulses simple and true,
Yet tempered by judgment, and taught by good sense,
And cordial with me and with you:
For the finest in manners as highest in rank,
It is you man! or *you* man! who stand
Nature's own nobleman, friendly and frank,
A man with his heart in his hand.

Original Song.

[Sung at the Meeting of the First Division of the Cherokee Cold-water Army, Tahlequah, May 6, 1846.

Come fathers and mothers,
And sisters and brothers,
And hearken awhile to my song;
I'll tell you the story
Of Paddy O'Rory,
If you can but listen so long.

Now Paddy, when sober,
Was mild as October,
And kind to his children and wife;
But when he'd been drinking,
O then, I am thinking,
They had little peace of their life.

Whoever came near him
Had reason to fear him,
When liquor had heated his brain;
For boxing and fighting
He took such delight in
As if there were pleasure in pain.

Such cursing and swearing,
And ripping and tearing,
'Twould make your ears tingle to hear;
He reeled and he staggered,
He blustered and swaggered,
And challenged whoever came near.

His money he wasted,
To ruin he hasted,
A pallet of straw was his bed;
His clothes were all tattered,
His house was all shattered,
His children were begging for bread.

O! such was the story
Of Paddy O'Rory,
Till once a kind gentleman came,
A paper presented,
And Paddy consented,
And wrote on that paper his name.

What magic was in it!
From that blessed minute
O'Rory became a new man;
In boxing and fighting
No longer delighting,
He works just as well as he can.

No longer he staggers,
No longer he swaggers,
No longer he curses and swears;
His frolics are ended,
His cottage is mended,
And decent apparel he wears.

There's peace in his dwelling,
And little ones telling
Their love to a father so kind;
His wife is confessing
Her gladness, and blessing
The day when that paper he signed.

Now what was that paper?
That wonderful paper?
The *Temperance Pledge* was the same.
If ever you find it,
And have not yet signed it,
O! write on that paper your name.

Beauty and Innocence.

The rosy hours of childhood,
How beautiful they seem,
While glides life's fairy shallop,
Like the spirit of a dream—
Ere the bright blue sky of pleasure,
Hath one gloomy cloudlet known,
Ere the heart's pure spirit breathings,
Profaned by earth have grown.

All loveliness of childhood—
What is it but the ray
Of Heaven, which still tarries
Around life's early day,
Ere the birth-right signet given,
To mark a brighter sphere,
Grows darkly dim and vanishes
Beneath each earth strain here.

How pure the thoughts of childhood!
In life's unshadowed hours,
They float amid a fairy land
Of zephyrs and of flowers,
As float the sunbeams lightly,
O'er the glancings of a stream—
The rosy hours of childhood,
How beautiful they seem.

CORRECTION.—The rule given (on erroneous authority) in our last, for casting interest, will not apply for any other rate but that of six per cent

Jumble.

A certain Irishman, making love to a lady of great fortune, told her he could not sleep for dreaming of her.——It is said to be peculiarly pleasant to see a man going to a theatre with his family, who owe you two dollars, which you have asked for several times in vain.——The term 'Transcendentalist,' has been defined in Boston, as 'an author who attempts *squizzebobs* in language!'——Somebody says there is a 'finger Post' down East, that not only points you the way, but walks by your side till you arrive at the place of destination.——'Keep dark!' said a white thief to a negro accomplice. 'You've nothing to fear,' said darky, when the other had been 'swung off.'——'G'way, g'way, dere: you'm doin' mischief,' said a negro, who stood on the top of a ladder, to a hog, which was rubbing againt the bottom of it.——'What time is it, Tom?' 'Just time to pay that little account you owe me,' 'Oh, indeed! well! I didn't think it was half so late! I must be off, or I shall lose my dinner."——The number of castles, of which there are known to be existing remains, in Great Britain, is 723, of which 155, were in Scotland.——Most of our misfortunes are more supportable, than the comments of our friends upon them.——None are so fond of secrets, as those who do not mean to keep them: such persons covet secrets, as a spendthrift covets money, for the purpose of circulation.——It is stated that the light of lightniug may be seen at a distance of two hundred miles, although the report, or thunder, is seldom heard more than twenty or thirty.——Whenever you would borrow money of a man, be sure that you do not let him know that you need it: you will not be half so likely to get it if you do.——The shortest man ever heard of, was one who when standing on his feet, had to look up and examine the blacking on his shoes.——A broker in Boston, who had a house to sell, carried a "brick in his hat," as a sample of it.——*I will not detain you*, as the loafer said to the constable, who left his charge to run from a mad dog.——A Western paper says, that ladies should never go to fires, as their bright eyes are more apt to kindle a flame than to extinguish one. Isn't that bright?——It is recommended as an excellent amusement, during a long heavy rain, to endeavor to recollect who it was that borrowed your umbrella, the week before.——There is an editor in old Virginia, by the name of Cake. His wife says he is a *sweet* cake, and never accuses him of being *half-baked*.——Never forget that it takes two to make a slander—one to tell it, and one to listen to it.——"Sweet is the kiss of a sister," says some lord poet. John Smith thinks that of a cousin is about as sweet.——There was an abundance of green corn in the market last week—all but the *green*.——A Western paper speaks of the appearance of a mysterious disappearance in his village: of course there was no fault of non-appearance.——We have heard of a man being *arrested* while lying drunk in the gutter: it must be a wrong application of the term.——"Oh, I have caught a spark,," said a laughing girl when her dress caught fire in a railway car.——The Bangor Gazette, speaking of the weather, says, the season is at least ten days in advance of last year.——It has been decided that there is no other word in the dictionary so bad as "worse."——I may B 1 of the lovers of U, said a miss of 6 teen 2 a 10 der 4 leg of mutton B 4 she 8 a piece of it.——A Western editor lately turned off his readers with the plea that he had "fence to build, sheep to sheer, trowsers to patch, and corn to weed." No time to write.——"Take this in a little molasses," said the doctor, handing his patient a written prescription. True to the word, the patient soused the paper in molasses, and swallowed it.——Thieves and pickpockets generally, are said to be strongly opposed to the "right of *search*."——Stubbs Says there are three things indispensable to tranquillity in these times; namely, to owe nothing, own nothing, and know nothing.——At a theatrical performance, the house was so crowded that the audience had to laugh *perpendicularly*, there being no medium for a lateral chatchination. When you see flower pots tastefully arranged in the windows of a house, or a selected assortment in the front yard, you may suppose an elegant lady lives there.——Every temptation to which we do not yield, is said to be a benefactor to us, as we invariably gain strength, and confidence, from every temptation which we resist.——It is reported that a boy in Vermont, grows so fast, that his clothes are too short before they are put on, and he has lately grown three inches through the crown of his hat.

TROUBLE AT JERUSALEM.—A tremendous battle was fought in the church of the Holy Sepulchre at Jerusalem on last Good Friday, between the Greeks and Latins. The subject of contention was whether or not the carpet should be removed from the floor. Several persons were killed and many more wounded, and during the fracas many valuable articles were stolen from the church. The Pasha at length arrived with a company of troops, and cleared the church of both parties.

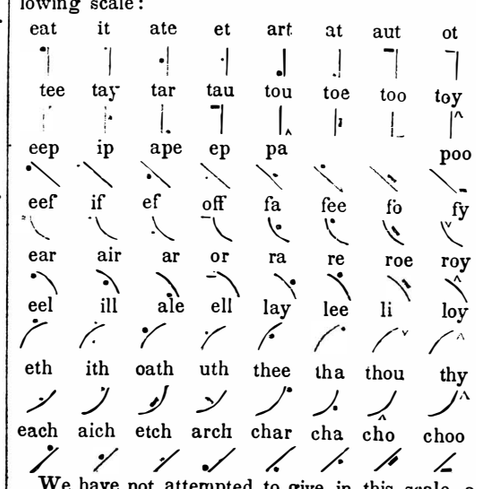
THE TELEGRAPH.—During a tremendous shower at Philadelphia, the lightning is said to have coursed along the telegraphic wires like a rocket on a line. Among those who saw this phenomenon, was an Irishman who had just turned out of his lair, and gone to work on a building in Somerset street, over which the wires pass.—"Och, Jabers!" cried Pat, "that's news iv a battle with the Mexican spalpanes! Anybody can tell that by the blaze and smell of gunpowther."

AMIABLE SIMPLICITY.—'Pray Madam,' said a young gentleman, addressing the daughter of one of our booksellers, whom her father had deputed to stop in the store while he stepped to the next door, —an amiable girl of sweet sixteen,—'pray madam may I ask if you have Ten Thousand a Year?—'No sir,' she sweetly replied, letting fall her fringed eye-lids—'no sir, but father says he will settle a house in Magazine street on me: but that aint worth more than two thousand a year.' The young gentleman thought the circumstance 'very interesting.'

Phonography.

(Continued from No. 42.)

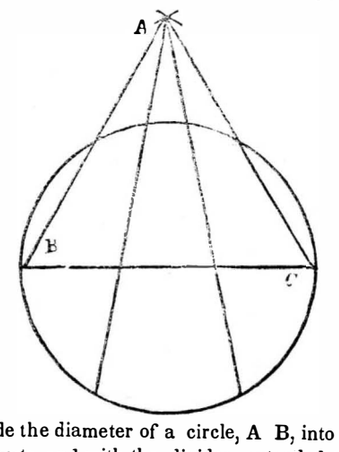
When a person has become accustomed to writing with these signs, and to reading them, he will generally be able to read his own writing without the use of any vowel signs. For example, "if the sentence "No gentleman will insult me, and no other can," be written, "n gntlmn wll nslt m nd n thr cn," the writer thereof would find no difficulty in reading it or any variety of paragraphs written without vowels. But writing which is intended or required to be read by another person, must be written with more precision. In Pitman's system of phonography a set of signs are used to represent the vowel sounds. These consist of simple dots, and short dashes, and their signification depends on the position in which they are placed: they are thus made to represent thirteen different vowel sounds. Six of these signs are made light, and represent the short sounds, as *not, coat, full*. The heavy signs represent the long sounds, as *naught, cote, fool*, &c. When a vowel precedes a consonant, the vowel sign is placed before the consonant, and *vice versa*, as shown in the following scale:


eat it ate et art at aut ot
tee tay tar tau tou toe too toy
eep ip ape ep pa poo
eef if ef off fa fee fo fy
ear air ar or ra re roe roy
eel ill ale ell lay lee li loy
eth ith oath uth thee tha thou thy
each aich etch arch char cha cho choo

We have not attempted to give in this scale, a full variety of combinations; but a sufficient variety to enable a learner to form many other of the most common and simple combinations, and to write many words and even sentences for himself: and it will be better for him to practice the writing or formation of these characters or signs, for a reasonable time before he attempts or even understands the mode of joining the signs together, as in regular phonographic writing. It must be observed that wherever the letter r occurs in the illustration of the sounds represented by the signs in the foregoing scale, the r is intended to be silent, but is inserted by way of qualifying the sound of the vowel in connection. We are aware that Mr. Pitman would not approve of our arrangement of the signs in the scale above: nor do we approve of his tedious analysis and classifications, which appear to us to be unnecessary and even more difficult to learn, than the phonographic writing without it. The sign of the vowel sound of u we have not inserted in this scale, because we find it almost excluded from the Pitman system; but we shall introduce it, however, in a futurn number. With regard to the vowel signs, lest some should object to them on account of the difficulty of making them when writing from the articulation of a speaker, we may add the remark, that it is not customary in such cases to note the vowel signs at the first writing, but to add them afterward, when more at leisure. Facts have sufficiently proved that this system may be both learned and practised with great facility, and is well worthy of the attention of young people of both sexes who have time to attend to it.

(To be continued.)

A Curious Fact in Geometry.



Divide the diameter of a circle, A B, into three equal purts, and with the dividers extended to this diameter, describe the point C: draw lines from this point to A and B, and also through the points of division, to the opposite periphery, and these four lines by their intersections, will have divided the circumference into six equal parts.

Magnetic Telegraph.

The approach of the steamer Cambria was announced in Boston by means of the Marine Telegraph, while the vessel was yet nearly forty miles from the harbor. But this news did not stop at Boston, but was, within five minutes, also announced in New York by means of the Magnetic Telegraph. We were also apprised at New York of the progress of the Cambria as she entered the harbor, and at the moment she passed into the dock. By this wonderful medium of intelligence, the arrival of the steamer was reported in Springfield, Hartford, New Haven, New York, Philadelphia, Baltimore and Washington, before the vessel reached the wharf in Boston: and the principal items of news was published in most of those places, at the same time and within one hour from the time it was published in Boston.

PARSING LESSON FOR GRAMMARIANS.—They see:—we see them see:—they see we see them see:—you see they see we see them see:—I see you see they see we see them see:—they see I see you see they see we see them see.

Geological Gleanings in Mississippi.

(Continued from No. 43.)

The ridges extending between these hollows, such as they exist now in the newly cleared, uncultivated, and forest portions of this range, have the same description and depth of soil on the sides and declivities as on the summits, and rarely present any natural sections of stratification. They are now greatly changed and water-worn, where the lands have been long or negligently cultivated, and numerous channels, cut by the action of the rains, penetrate the different strata of clay, sand and gravel which underlie the rich vegetable mould of the surface.

In the whole course of this bluff range, the localities most remarkable for excessive unevenness of surface, and the magnitude and depth of the depressions, are in the rear of Fort Adams of Rodney, Grand Gulf and Vicksburg, and at each the soil is deep and rich in an extraordinary degree but from extensive tracts, aided by the plough and favored by the steep declivities, it has long since *migrated*, and contributes to the extension of the Mississippi delta, into the Gulf of Mexico.

The western verge of this alluvial tract terminates abruptly, and frequently in almost perpendicular cliffs. The base of these is washed by the Mississippi at Loftus Heights, near the 31st deg. of latitude, at the White Cliffs, a short distance below the mouth of St. Catherine's, at Natchez, Rodney, Grand Gulf, and Walnut Hills, or Vicksburg. They approach, also, very near the river, and in view of it at Pine Ridge, below Fairchild's Creek, at Villa Gayoso, below Coles' Creek, and at Warrenton. Between these points the range recedes more or less from the river, leaving the intervening portions of the recent alluvium before described. Above the Walnut hills the bluffs come into the Yazoo river at the site of the old French fort St. Peter, now known as Haines' Bluff, and approaches it nearly at Satartia, Yazoo City, and at other points in Holmes, Carrol, and Tallahatchie Counties. Above Warren County they gradually lose the distinctive character of the southern portion of the chain, as they extend towards the northern border of the State; the soil becoming rather superficial and less productive. As a type of some of the striking features which this bluff range presents, more or less frequently below the Walnut hills, some of the most marked and prominent which occur in Adams county may be noticed. Around the sources of St. Catherine's Creek arise a range of broken eminences, which stretch eastwardly to Cole's Creek, passing around the south-westernmost branch to the northeastern corner of the county, where it attains to an elevation of several hundred feet, presenting a distinct promontory, with a series of abrupt declivities to the west, forming a second step or terrace in the general bluff range, and commanding a very pleasing and extensive prospect.

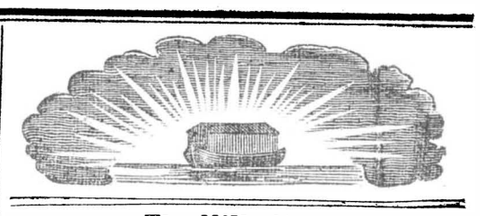
Here is found profusely spread on and near the surface, the most considerable and ~~continuous~~ deposite of diluvium or drift which occurs in the county. It is composed of coarse gravel and sand, with occasional beds of plastic clays variously colored, the stratum dipping or inclining apparently to the west, and being exposed again in the escarpment of the Mississippi bluffs. These loose materials are found strewn along the channels of the creeks for many miles; the coarse gravel, however, gradually diminishing, and is rarely met with nearer than four or five miles from the river.

Connected with this formation, on a branch of Coles' Creek, a few miles south-westerly from the principal eminence, are found two considerable mounds, about half a mile apart, nearly insulated, and composed chiefly of a dark feruginous conglomerate or iron stone, large misshapen masses of which, of several tons in weight, lie exposed on the surface. The lower and most considerable of these rises sixty or eighty feet above the creek which washes its western base, and embraces an area of several acres. In the vicinity of these, in a cove nearer the sources of the creek, the face of the cliff is indented by broad perpendicular fissures, exposing sections of thirty or forty feet in height, of red and white sand intermixed with a feruginous adhesive clay. No stratification is apparent, but the lower portion of the deposite is somewhat mixed with gravel. Fifteen or twenty feet below the surface, several blocks or shafts of petrified wood about five or six feet long and eighteen inches in diameter were found projecting from the face of the cliff, from which smaller fragments in considerable quantity had fallen to its base.

Many ravines occur in the county: the most numerous and considerable of these are found within a short distance of the western verge of the bluff, as at Natchez and on Pine Ridge. Most of these have a direction somewhat parallel with the general curve of the river, rather receding from it and discharging the occasional accumulations of rain water, which they receive into the St. Catherine and Fairchild's creeks.

A few of the less extensive are merely protrusions of the chasms or breaks in the bluffs, prolonged by the washing and caving in of the surrounding cultivated lands. These ravines claim a notice from their magnitude, the rapidity with which they are extending themselves, and as the chief depositories of the fossil remains found in the county.—The one on Pine Ridge, known usually as the Mammoth Bayou, is several miles in length, discharging itself into St. Catherine a short distance above the railroad, about three miles east from the Mississippi: the upper end has approached to within a mile and a half of the river. This ravine is from one to two hundred feet across in many places with an average depth of about fifty feet, penetrating occasionally to the blue clay. The sides are precipitous and often perpendicular, and are continually caving in during the winter rains: acres of land being annually undermined and precipitated into the abyss, the numerous ramifications or branches thus extending themselves and encroaching fearfully upon the surrounding fields. Here have been found portions of several skeletons of the Mastodon and other animal remains.

(To be continued.)



The Millerites.

(Continued from No. 42.)

That Papacy is the power or institution spoken of in the prophecies as "the abomination that maketh desolate," has been generally admitted by Protestants of all denominations since the days of Luther; and the Millerites have produced volumes of evidence, comparing prophecy with history, to prove that the *taking away of the daily*, and *setting up the abomination that maketh desolate*, refers to the suppression of Paganism and the establishment of Papacy in its place: and taking the ground that the periods of 1290 days, and of 1335 days mentioned in the 12th chapter of Daniel, both commence with this event, they have diligently examined the various histories of Rome and of the church to ascertain at what time this event occurred, or what circumstance might be rationally supposed to constitute the consummation of that event, and show the proper date for the commencement of those periods. Mr. Miller had examined that ground, and observing that the military victories and success of arms, whereby Papacy gained the ascendency over Paganism, occurred in A. D. 508, and that in 1798,—just 1290 years later—a French army under Berthier took possession of Rome and made a prisoner of the Pope, he (Miller) concluded that the longer period of 1335 days would terminate in 1843. But finding themselves mistaken in this calculation, his adherents have now adopted the argument that in all cases in which prophetic periods have been given, they were counted from the completion of the events which were to constitute their commencement. Thus in the case of the Babylonish captivity, the 70 years were counted, not from the subjugation of the Jews, when Nebuchadnezzar took possession of Jerusalem, and carried the principal men into captivity, but from the completion of the desolation, and destruction of the best part of the city ten or twelve years afterward. Also, in regard to the seventy weeks "from the going forth of the commandment," &c. (Dan. ix. 25); several decrees favorable to the restoration of Jerusalem, had been issued by different kings of Persia, in the course of 30 years; but this period is proved to have commenced with the very last and final decree for that object, or with the actual execution thereof. It is therefore argued that these later periods must commence with the completion or consummation of the events and measures by which the ascendency of Papacy became established. It is now stated by those who advocate this doctrine, and on the authority of Dupin, Gibbon, and other historical writers, that Clovis of ~~France~~ was the first king that embraced the Catholic faith; and on this occasion he received the title of "Most Catholic Majesty and Eldest Son of the Church;" and being a warrior whose arms "were everywhere successful," he applied all the power of his arms against the enemies of the church, to the suppression of Paganism and the establishment of Papal supremacy, according to the prophecy, Dan. xi. 31, that "arms shall stand on his part," &c. His most important victories and success of arms in this respect, were about A. D. 508; dut he devoted himself to the founding of churches and monasteries, severely punishing with stripes those who refused obedience to the church, till the year of his death, A. D. 511. In July of that year, he called a council, consisting of thirty-three bishops, for the purpose of discussing and deciding on measures for the regulations and permanency of the Papal church, which now triumphed over Paganism. This was the last important event in the career of Clovis, by whose arms Papacy had been established; and as he died in November of the same year, no later event can be found on which the commencement of these prophetic periods can be fixed with the least apparent propriety. Thirty years after this event, A. D. 541, and when the Pope had acquired "power and dominion and great authority" from the Emperor Justinian, the consular power at Rome was abolished, and the Pope came into full possession of the city of Rome (the *seat* of the beast, Rev. xiii. 2,) and there was never afterward any other power resident at Rome, and acknowledged as supreme until after its conquest by the French in 1898. This event fixes the commencement of the "time, times and a half time," "forty and two months," or "a thousand two hundred and three score days," during which the *power* of the beast should continue; and it is well known to the present generation that 1260 years from this date,—which is 1290 years from that before-mentioned,—a treaty was negotiated under the dictation of Napoleon Bonaparte at Paris, by which Papacy was finally and permanently divested of nearly the whole of the great power and authority which it had exercised for 1260 years: and this treaty was ratified in September, 1801. The Millerites, some of them at least, are perfectly confident, that history can never be made to furnish any other three events which will so perfectly apply to mark the commencements and terminations of these *two* prophetic periods: and the reader will see that "if these things are so," the other period of 1335 days must terminate in 1846.

(To be continued.)

SENSIBLE EXTRACT.—'How beautiful, how sublime the precept, 'forgive us our trespasses as we forgive those who trespass against us.' But who would willingly be thus adjudged? Who is there that does not hope for more mercy at the hand of his Maker, than he has shown to his fellow men? And yet how positive is the sentence that 'if ye forgive not men their trespasses, neither will your Heavenly Father forgive your trespasses."

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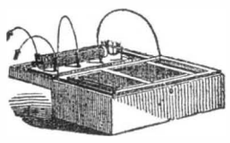

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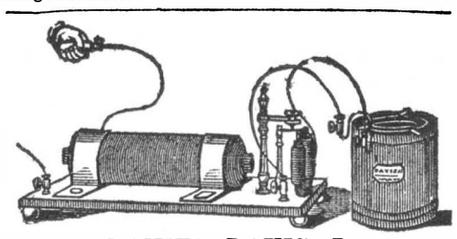

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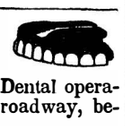
TEETH



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Miniatures obtained at this establishment in superior style, for One Dollar and upwards, according to size and finish. Every picture shall give satisfaction.

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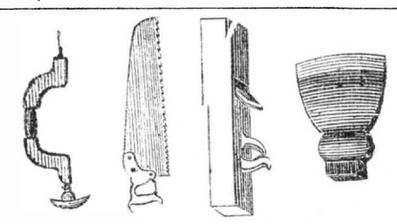
Rolling Mills, blast Furnaces & Forges,

Iron works of all descriptions, erected upon the most improved plans; steam or water powers.

Drawings, plans and estimates made for buildings, furnaces and machinery, and contracts for the whole or any part thereof taken and executed with promptness and despatch; and will also give his personal superintendence in the erection of iron works of all kinds, such as Rolling mills, blast furnaces—of hot and cold blasts—anthricite, bituminous, and charcoal or wood furnaces, forges, trip-hammers; iron, brass, and bell foundry, pudling and heating furnaces, air cupolo chaffery and refinery, or let out furnaces.

N.B.—All letters directed, post-paid, to S. B. MERKEL, Founder-machinist, millwright, draughtsman and Engineer, Philadelphia. Pa. feb11.



AT HENRY ROWNTREE'S old established *Tool Store*, at the Corner of Chambers and Chatham streets, Mechanics, Farmers, &c., will find an assortment of good Tools, suitable for almost every branch of trade.

H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.

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First rate Razors; Pen and Pocket Knives; Table Knives and Forks, &c.

☞ Remember, at the corner of Chambers and Chatham streets. dec26

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Are prepared, with all the improvements in the art of Daguerreotyping, to execute PORTRAITS in a beautiful and finished style.

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Copies taken of Portraits, Miniatures, Engravings, &c. &c.

Plain Portraits, including morocco case,	$1 00.
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Persons are invited to call and see their own
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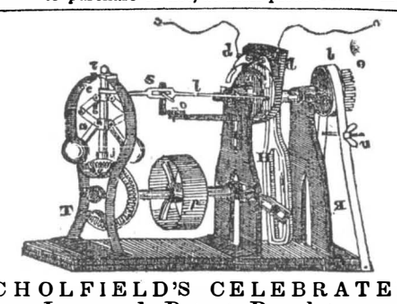

SCHOLFIELD'S CELEBRATED
Improved Patent Regulator.

N. CHOLFIELD, Norwich, Conn., continues to manufacture, and keeps constantly on hand, his Improved Patent Regulators, for water-wheels and steam engines; he makes five different sizes, indicated by numbers comencing at the largest size, which is called No. 1, &c..

They are built in a neat and compact form, and printed directions accompany each machine, which will enable any mechanic to put them in operation; as a general rule the different numbers are adapted to different sized wheels, as follows;

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The following agencies have been established for the sale of these machines:—Jones, Denney & Ward, Boston; V. J. Bates & Co., Providence, R. S; Charles Schenck, New York city; D. Wight & Lon, Troy, N. Y.; R.M. Vansickler, Albany, N.Y. S.C. Bemis, Springfield, Mass.; Denslow & Beach,; Hartford, Conn.; Joseph B. Hughes, Philadelphia; Wells Chase, and Towner Dunlap & Co.; Baltimore.

N. Scholfield also builds to order Bacon's Improved Pickers, a superior article for cotton or wool.

Norwich Conn., Feb. 14. f15eowtf.

MARSHALL'S TROY SHIRT DEPOT.

AT this Establishment may be seen the largest assortment of Shirts, Bosoms, Collars, &c., to be found in the city—all of our own manufacture, in Troy, which we offer to dealers and citizens in general, 25 per cent. below city prices. The above goods have won too high praise to need any puffing from us. It is sufficient to say that we are now patronized by all the principal dealers in the city, and the above goods have been generally approved of throughout the country, for being well made and for cheapness.

Just received—Linen bosom shirts with linen collars and wristbands—warranted—at 62 cents, 75 cents, 87 cents, $1, $1,25, $1,50, $1,75, $2. Also linen collars at 4 cents, 6 cents, 12 1-2 cents, 18 3-4 cents, and 25 cents.

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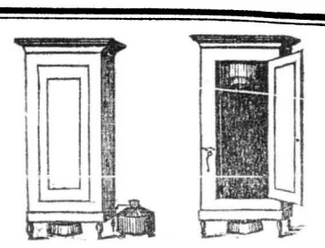
N.B.—Northern, Southern, Western and Eastern Merchants, who are making their purchases at the wholesale dry goods houses, will do well to inquire for goods of our manufacture, as it is sometimes the case, that other kinds are kept by them.



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JOHN LOCKE.
Dec 4.

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Feb11tf.

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Press, paper, and letter boards, of every description.
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Also, Pocket Books, Wallets, &c.
On the most extensive scale.

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